

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	318	((ion beam) and (ion adj2 (implanter or implantation))).clm.	US-PGPUB	ADJ	ON	2007/06/13 09:58
L2	6	I1 and ((detector with ((ion or beam) adj current))).clm.	US-PGPUB	ADJ	ON	2007/06/13 10:07
L3	1138	(250/492.21).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/06/13 10:06
L4	17	I1 and ((detector with ((ion or beam) adj current)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:11
L5	68	I3 and ((detector with ((ion or beam) adj current)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12
L6	11527	(ion beam) and (ion adj2 (implanter or implantation))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12
L7	129	L6 and (detector with ((ion or beam) adj current))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12
L8	67	L7 and pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12

## EAST Search History

L9	33	5 not L8	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12
L10	2	9 and pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:14
L11	17	9 and vacuum	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:14
S1	1	"09586492".rlan. or ("09".src. and "586492".ap.)	US-PGPUB; USPAT; USOCR; DERWENT	OR	ON	2007/06/12 11:25
S2	13	US-5814823-\$.DID. OR US-5998798-\$.DID. OR US-4283631-\$.DID. OR US-4421988-\$.DID. OR US-4449051-\$.DID. OR US-4504194-\$.DID. OR US-4807994-\$.DID. OR US-4922106-\$.DID. OR US-5475618-\$.DID. OR US-5572038-\$.DID. OR US-5711843-\$.DID. OR US-5760409-\$.DID. OR US-6101971-\$.DID. OR EP-0457321-\$.DID.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:17
S3	2	("5319212").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/06/12 09:13
S4	4	((("4587433") or ("4751393"))).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/06/12 10:18

## EAST Search History


S5	7	("4118630"   "4234797"   "4357536"   "4539217"   "4717829"   "4849641"   "5180918").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:29
S6	13	("4283631"   "4421988"   "4449051"   "4504194"   "4587433"   "4751393"   "4807994"   "4922106"   "5475618"   "5572038"   "5711843"   "5760409"   "6101971").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:33
S7	11	S6 not S4	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:34
S8	13	US-5814823-\$.DID. OR US-5998798-\$.DID. OR US-4283631-\$.DID. OR US-4421988-\$.DID. OR US-4449051-\$.DID. OR US-4504194-\$.DID. OR US-4807994-\$.DID. OR US-4922106-\$.DID. OR US-5475618-\$.DID. OR US-5572038-\$.DID. OR US-5711843-\$.DID. OR US-5760409-\$.DID. OR EP-0457321-\$.DID.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:35
S9	2	S6 not S8	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:35
S10	11527	(ion beam) and (ion adj2 (implanter or implantation))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 09:57
S11	129	S10 and (detector with ((ion or beam) adj current))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:01
S12	67	S11 and pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/12 11:31

## EAST Search History

S13	15	("4587433"   "4717829"   "4751393"   "4929840"   "5136171"   "5572038"   "5631461").PN. OR ("5814823").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 17:40
S14	17	("4118630"   "4234797"   "4357536"   "4539217"   "4717829"   "4849641"   "5180918").PN. OR ("5319212").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 17:47
S15	32	("4539217").URPN.	USPAT	OR	ON	2007/06/12 17:54

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2423	(250/492.1).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/06/13 15:07
L2	11527	(ion beam) and (ion adj2 (implanter or implantation))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 15:08
L3	148	1 and L2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 15:08
L4	12	I3 and (detector with ((ion or beam) adj current))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 15:09
L5	8	I4 and pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 15:09

Source: Combined Source Set 10  - Utility, Design and Plant Patents  
Terms: patno=6323497 ([Edit Search](#)) ([Suggest Terms for My Search](#))

586492 (09) 6323497 November 27, 2001

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

6323497

◆ [Get Drawing Sheet 1 of 4](#)

[Access PDF of Official Patent \\*](#)

[Check for Patent Family Report PDF availability \\*](#)

\* Note: A transactional charge will be incurred for downloading an Official Patent or Patent Family Report. Your acceptance of this charge occurs in a later step in your session. The transactional charge for downloading is outside of customer subscriptions; it is not included in any flat rate packages.

[Order Patent File History / Wrapper from REEDFAX®](#)  
[Link to Claims Section](#)

November 27, 2001

Method and apparatus for controlling ion implantation during vacuum fluctuation

**REISSUE:** June 24, 2003 - Reissue Application filed Ex. Gp.: 2881; Re. S.N. 10/602,795 (O.G. November 11, 2003)

**INVENTOR:** Walther, Steven R. - Andover, Massachusetts, United States (US)

**APPL-NO:** 586492 (09)

**FILED-DATE:** June 2, 2000

**GRANTED-DATE:** November 27, 2001

**ASSIGNEE-PRE-ISSUE:** June 2, 2000 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC. 35 DORY ROAD GLOUCESTER, MASSACHUSETTS, 01930, Reel and Frame Number: 010870/0574

**ASSIGNEE-AT-ISSUE:** Varian Semiconductor Equipment Assoc., Gloucester, Massachusetts, United States (US), United States company or corporation (02)

**LEGAL-REP:** Wolf, Greenfield & Sacks

**PUB-TYPE:** November 27, 2001 - Utility Patent having no previously published pre-grant publication (B1)

**PUB-COUNTRY:** United States (US)

**US-MAIN-CL:** 250#492.21

**US-ADDL-CL:** 250#492.1

**CL:** 250

**SEARCH-FLD:** 118#723, 438#14, 438#15, 116#208, 250#492.21, 364#550, 156#345

LexisNexis® CourtLink®

**Welcome** [Order Documents](#) | [Available Courts](#) | [Total Litigator](#) | [Lexis.com](#) | [Sign Out](#)  
**Diane**  
**Jackson!**

[My CourtLink](#) [Search](#) [Dockets & Documents](#) [Track](#) [Alert](#) [Strategic Profiles](#) [My Account](#)



[Search](#) > [Patent Search](#) > Searching

Patent Search 6323497 6/13/2007

No cases found.

[Return to Search](#)

(Charges for search still apply)




LexisNexis®

[About LexisNexis](#) | [Terms & Conditions](#) | [Pricing](#) | [Privacy](#) | [Customer Support](#) - 1-888-311-15  
Copyright © 2007 LexisNexis®. All rights reserved.

Query/Command : prt ful legalall max


1/1 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042800404444

PN -  US6323497 B1 20011127 [US6323497]

STG: U.S. Patent (no pre-grant pub.) after Jan. 2, 2001

AP : 2000US-0586492 20000602

 WO200195363 A1 20011213 [WO200195363]


STG: Publ. Of int. Appl. With int. Search rep

AP : 2001WO-US13008 20010423

TW493211 B 20020701 [TW-493211]

STG: Patent

AP : 2001TW-0110853 20010507

 EP1287544 A1 20030305 [EP1287544]

STG: Public. Of applic. With search report

AP : 2001EP-0928753 20010423

CN1432187 A 20030723 [CN1432187]

STG: Unexamined application

AP : 2001CN-0810260 20010423

JP2004513471 T 20040430 [JP2004513471]

STG: Unexam. Pat. Appl. On foreign appl.

AP : 2002JP-0502808 20010423

EP1287544 B1 20060222 [EP1287544]

STG: Patent

DE60117374 D1 20060427 [DE60117374]

STG: Granted EP number in bulletin

AP : 2001DE-6017374 20010423

CN1307678 C 20070328 [CN1307678C]

STG: Granted patent

TI - METHOD AND APPARATUS FOR CONTROLLING ION IMPLANTATION  
DURING VACUUM FLUCTUATION

PA - VARIAN SEMICONDUCTOR EQUIPMENT

PA0 - Varian Semiconductor Equipment Associates Inc.; 35 Dory Road; Gloucester,  
MA 01930 (US)

IN - WALTHER STEVEN R

PR - 2000US-0586492 20000602; 2001WO-US13008 20010423

IC - G21G-005/10

H01J-037/02

H01J-037/18

H01J-037/30

H01J-037/304

H01J-037/317

H01L-021/00

H01L-021/02

H01L-021/265

ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]

ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]

EC - H01J-037/304

H01J-037/317A

**ICO** - T01J-237/317A1

**PCL** - ORIGINAL (O) : 250492210; CROSS-REFERENCE (X) : 250492100

**DS** - (EP1287544)  
DE FR GB IT

**DS** - (WO200195363)  
CN IL JP KR European patent (AT BE CH CY DE DK ES FI FR GB GR IE IT  
LU MC NL PT SE TR)

**CT** - (EP1287544)  
Cited in the search report  
See references of WO 0195363A1

**CT** - (US6323497)  
US4283631; US4421988; US4449051; US4504194; US4587433; US4751393;  
US4807994; US4922106; US5475618; US5572038; US5711843; US5760409;  
US6101971

**CT** - (WO200195363)  
Cited in the search report  
US5814823(A)(Cat. X);US5319212(A)(Cat. X);WO0007030(A)(Cat.  
X);EP457321(A)(Cat. Y);EP964426(A)(Cat. Y)

**AB** - (US6323497)  
A method and apparatus for controlling implantation during vacuum fluctuations along a beam line. Vacuum fluctuations may be detected based on a detected beam current and/or may be compensated for without measuring pressure in an implantation chamber. A reference level for an ion beam current can be determined and a difference between the reference value and the measured ion beam current can be used to control parameters of the ion implantation process, such as a wafer scan rate. The difference value can also be scaled to account for two types of charge exchanging collisions that result in a decrease in detected beam current. A first type of collision, a non-line of sight collision, causes a decrease in detected beam current, and also a decrease in the total dose delivered to a semiconductor wafer. A second type of collision, a line of sight collision, causes a decrease in detected beam current, but does not affect a total dose delivered to the wafer. Scaling of the difference can therefore be used to adjust a wafer scan rate that accounts for non-line of sight collisions.

**OBJ** - (US6323497)  
The invention relates to controlling ion implantation during vacuum fluctuation. In particular, the invention relates to controlling an ion beam implantation process to compensate for vacuum fluctuation based on a measured beam current and not a measured pressure.  
The invention provides methods and apparatus for controlling an ion beam implantation process in the presence of vacuum fluctuation along the beam line. In one aspect of the invention, vacuum fluctuations can be detected based on a detected ion beam current, and not a detected pressure.  
Thus, the beam current difference DELTA I is a function of both the line of sight collisions and non-line of sight collisions.

**ADB** - (US6323497)  
In addition, it is not necessary to use all three detectors 41-43.  
These collisions can cause ions in the beam to experience a charge change.

The charge exchanging collisions that result when the vacuum level along the beam line drops can cause problems because the detectors used to determine and control the ion beam current (and also the total dose of the wafer) during implantation typically only detect charged particles, but not neutral particles. Since the typical ion beam current detector, such as a Faraday cup, is not capable of detecting the neutral particles, neutral particles that should be counted as contributing to the wafer dose are not detected.

**ICLM** - (US6323497)

1. An ion implantation system comprising:  
means for generating an ion beam;  
means for determining an ion beam current reference level;  
means for measuring an ion beam current during implantation; and  
means for adjusting an ion implantation parameter to compensate for vacuum fluctuations during implantation based on the reference level and the measured ion beam current, and not based on a detected pressure.
2. An ion implantation system comprising:  
a beam generator that generates an energetic ion beam and directs the beam toward a semiconductor wafer;  
a detector that detects an ion beam current;  
a wafer drive that moves the semiconductor wafer in a direction transverse to the ion beam path; and  
a controller that receives signals from the detector representative of a detected ion beam current, detects a vacuum fluctuation based on the detected ion beam current, and controls the wafer drive to adjust a wafer scan rate to compensate for the vacuum fluctuation during implantation.

**UP** - 2003-21


1 / 5 LGST - ©EPO

**PN** - DE60117374 D1 20060427 [DE60117374]  
**AP** - DE60117374 20010423 [2001DE-6017374]  
**ACT** - 20070125 DE/8332-A [-]  
 NO LEGAL EFFECT FOR DE  
 WIRKUNG FUER DE NICHT EINGETRETEN  
**UP** - 2007-04

2 / 5 LGST - ©EPO

**PN** - TW493211 B 20020701 [TW-493211]  
**AP** - TW90110853 20010507 [2001TW-0110853]  
**ACT** - 20021112 TW/GD4A-A [+]  
 ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT  
 ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT  
**UP** - 2004-28


3 / 5 LGST - ©EPO

**PN** -  US6323497 B1 20011127 [US6323497]

AP - US58649200 20000602 [2000US-0586492]  
ACT - 20000602 US/AS-A  
ASSIGNMENT  
OWNER: VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC.  
35; EFFECTIVE DATE: 20000530  
ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNOR:WALTHER,  
STEVEN R.;REEL/FRAME:010870/0574  
  
20031111 US/RF-A  
REISSUE APPLICATION FILED  
EFFECTIVE DATE: 20030624  
UP - 2004-29

---



4 / 5 LGST - ©EPO

PN -  WO200195363 A1 20011213 [WO200195363]  
AP - WOUS0113008 20010423 [2001WO-US13008]  
ACT - 20011213 WO/AK [+]  
DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH  
SEARCH REPORT  
CN IL JP KR  
  
20011213 WO/AL [+]  
DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A  
PUBLISHED APPLICATION WITH SEARCH REPORT  
AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
  
20020206 WO/121  
EP: THE EPO HAS BEEN INFORMED BY WIPO THAT EP WAS  
DESIGNATED IN THIS APPLICATION  
  
20020221 WO/DFPE  
REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO  
EXPIRATION OF 19TH MONTH FROM PRIORITY DATE  
  
20021127 WO/WWE [+]  
WIPO INFORMATION: ENTRY INTO NATIONAL PHASE  
< 018102603 >  
  
20021130 WO/WWE [+]  
WIPO INFORMATION: ENTRY INTO NATIONAL PHASE  
< 1020027016409 >  
  
20021202 WO/ENP  
ENTRY INTO THE NATIONAL PHASE IN:  
JP 2002 502808A [2002JP-0502808]  
  
20030123 WO/WWP [+]  
WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE  
< 1020027016409 >

UP - 2006-42

---

5 / 5 LGST - ©EPO

PN -  EP1287544 A1 20030305 [EP1287544]  
 EP1287544 B1 20060222 [EP1287544]

AP - EP01928753 20010423 [2001EP-0928753]

ACT - 20030305 EP/17P-A [+]  
REQUEST FOR EXAMINATION FILED  
PRUEFUNGSANTRAG GESTELLT  
EFFECTIVE DATE: 20021129

20030305 EP/AK-A [+]  
DESIGNATED CONTRACTING STATES:  
BENANNTTE VERTRAGSSTAATEN  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

20040512 EP/RBV-A [+]  
DESIGNATED CONTRACTING STATES (CORRECTION):  
BENANNTTE VERTRAGSSTAATEN (KORR.)  
DE FR GB IT

20050209 EP/17Q-A  
FIRST EXAMINATION REPORT  
ERSTER PRUEFUNGSBESCHEID  
EFFECTIVE DATE: 20041223

20060222 EP/AK-A [+]  
DESIGNATED CONTRACTING STATES:  
BENANNTTE VERTRAGSSTAATEN  
DE FR GB IT

20060222 EP/REG-A; GB/FG4D [+]  
GB: EUROPEAN PATENT GRANTED  
<GB>

20060427 EP/REF-A  
CORRESPONDS TO:  
ENTSPRICHT  
(DE 60117374 20060427 [DE60117374])

20070131 EP/26N-A [+]  
NO OPPOSITION FILED  
KEIN EINSPRUCH EINGELEGT  
EFFECTIVE DATE: 20061123

20070404 EP/25-A [-]  
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT  
INFORM. FROM NAT. OFFICE TO EPO  
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT

INFORM. FROM NAT. OFFICE TO EPO

<DE>

EFFECTIVE DATE: 20060523

20070420 EP/EN-A [-]

FR: TRANSLATION NOT FILED


FR: TRADUCTION N'A PAS ETE REMISE

UP - 2007-19

---

1/1 CRXX - ©CLAIMS/RRX

AN - 3611752

PN -  6,323,497 A 20011127 [US6323497]

PA - Varian Semiconductor Equipment Associates Inc

PT - E (Electrical)

ACT - 20030624 REISSUE REQUESTED

ISSUE DATE OF O.G.: 20031111

REISSUE REQUEST NUMBER: 10/602795

EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2881

Reissue Patent Number:

UP - 2003-46

UACT - 2003-11-11

Search statement 2

**Back**

 **Extended Family Search Results**
**US6323497/PN Results : 7****PATENT FAMILY**

#	Patent No.	Kind	Date	Applic.No.	Date
1)	CN1432187	A	20030723	2001CN-0810260	20010423
	CN1307678C	C	20070328		
2)	DE60117374	D1	20060427	2001DE-6017374	20010423
3)	EP1287544	A1	20030305	2001EP-0928753	20010423
	EP1287544	B1	20060222		
4)	JP2004513471	T	20040430	2002JP-0502808	20010423
5)	TW-493211	B	20020701	2001TW-0110853	20010507
6)	US6323497	B1	20011127	2000US-0586492	20000602
7)	WO200195363	A1	20011213	2001WO-US13008	20010423

**Priority :**

2000US-0586492	20000602
2001WO-US13008	20010423




---

 1 / 7 PLUSPAT - ©QUESTEL-ORBIT

**PN** - CN1432187 A 20030723 [CN1432187]  
**STG** - (A) Unexamined application  
**TI** - (A) Method and appts. for controlling ion implantation during vacuum fluctuation  
**PA** - (A) VARIAN SEMICONDUCTOR EQUIPMENT (US)  
**IN** - (A) WALTHER STEVEN R (US)  
**IC** - (A) H01J-037/18 H01J-037/317  
**PN2** - CN1307678 C 20070328 [CN1307678C]  
**STG2** - (C) Granted patent  
**IC2** - (C) H01J-037/02 H01J-037/18 H01J-037/30 H01J-037/304 H01J-037/317 H01L-021/02 H01L-021/265  
**AP** - CN01810260 20010423 [2001CN-0810260]  
**PR** - US58649200 20000602 [2000US-0586492]  
**ICAA** - H01J-037/18 [2006-01 A F I B H CN]; H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]; H01L-021/265 [2006-01 A L I R M JP]  
**ICCA** - H01J-037/02 [2006 C F I B H CN]; H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]; H01L-021/02 [2006 C L I R M JP]  
**UP** - 2005-08



- 2

## 2 / 7 PLUSPAT - ©QUESTEL-ORBIT


**PN** - DE60117374 D1 20060427 [DE60117374]  
**STG** - (D1) Granted EP number in bulletin  
**OTI** - (D1) VERFAHREN UND VORRICHTUNG ZUR STEUERUNG DER  
 IONENIMPLANTIERUNG BEI VAKUUMSCHWANKUNGEN  
**PA** - (D1) VARIAN SEMICONDUCTOR EQUIPMENT (US)  
**IN** - (D1) WALTHER R (US)  
**IC** - (D1) H01J-037/02 H01J-037/18 H01J-037/30 H01J-037/304 H01J-037/317  
**AP** - DE60117374 20010423 [2001DE-6017374]  
**PR** - WOUS0113008 20010423 [2001WO-US13008]  
 US58649200 20000602 [2000US-0586492]  
**ICAA** - H01J-037/18 [2006-01 A F I B H EP]; H01J-037/304 [2006-01 A - I R M EP];  
 H01J-037/317 [2006-01 A L I B H EP]  
**ICCA** - H01J-037/02 [2006 C F I B H EP]; H01J-037/30 [2006 C - I R M EP]; H01J-  
 037/317 [2006 C L I B H EP]  
**EC** - H01J-037/304  
 H01J-037/317A  
**ICO** - T01J-237/317A1  
**UP** - 2006-17

## 1 / 1 LEGALI - ©EPO

**PN** - DE60117374 D1 20060427 [DE60117374]  
**AP** - DE60117374 20010423 [2001DE-6017374]  
**ACT** - 20070125 DE/8332-A [-]  
 NO LEGAL EFFECT FOR DE  
 WIRKUNG FUER DE NICHT EINGETRETEN  
**UP** - 2007-04



## 3 / 7 PLUSPAT - ©QUESTEL-ORBIT

**PN** -  EP1287544 A1 20030305 [EP1287544]  
**STG** - (A1) Public. Of applic. With search report  
**TI** - (A1) METHOD AND APPARATUS FOR CONTROLLING ION  
 IMPLANTATION DURING VACUUM FLUCTUATION  
**OTI** - (A1) VERFAHREN UND VORRICHTUNG ZUR STEUERUNG DER  
 IONENIMPLANTIERUNG BEI VAKUUMSCHWANKUNGEN  
 (A1) PROCEDE ET DISPOSITIF DE COMMANDE D'IMPLANTATION  
 IONIQUE PENDANT DES FLUCTUATIONS DE VIDE  
**PA** - (A1) VARIAN SEMICONDUCTOR EQUIPMENT (US)  
**PA0** - Varian Semiconductor Equipment Associates Inc.; 35 Dory Road; Gloucester,  
 MA 01930 (US)  
**IN** - (A1) WALTHER STEVEN R (US)  
**IC** - (A1) H01J-037/18 H01J-037/317  
**PN2** - EP1287544 B1 20060222 [EP1287544]

**STG2** - (B1) Patent  
**TI2** - (B1) METHOD AND APPARATUS FOR CONTROLLING ION  
IMPLANTATION DURING VACUUM FLUCTUATION  
**OTI2** - (B1) VERFAHREN UND VORRICHTUNG ZUR STEUERUNG DER  
IONENIMPLANTIERUNG BEI VAKUUMSCHWANKUNGEN  
(B1) PROCEDE ET DISPOSITIF DE COMMANDE D'IMPLANTATION  
IONIQUE PENDANT DES FLUCTUATIONS DE VIDE  
**PA2** - (B1) VARIAN SEMICONDUCTOR EQUIPMENT (US)  
**IN2** - (B1) WALTHER STEVEN R (US)  
**IC2** - (B1) H01J-037/02 H01J-037/18 H01J-037/30 H01J-037/304 H01J-037/317  
**LA** - ENGLISH (ENG)  
**AP** - EP01928753 20010423 [2001EP-0928753]  
**PR** - WOUS0113008 20010423 [2001WO-US13008]  
US58649200 20000602 [2000US-0586492]  
**ICAA** - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]  
**ICCA** - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]  
**DS** - DE FR GB IT  
**UP** - 2003-10

---

*1 / 1 LEGALI - ©EPO*

**PN** - EP1287544 A1 20030305 [EP1287544]EP1287544 B1 20060222 [EP1287544]  
**AP** - EP01928753 20010423 [2001EP-0928753]  
**ACT** -  
20030305 EP/17P-A [+]   
REQUEST FOR EXAMINATION FILED  
PRUEFUNGSANTRAG GESTELLT  
EFFECTIVE DATE: 20021129  
  
20030305 EP/AK-A [+]   
DESIGNATED CONTRACTING STATES:  
BENANNTTE VERTRAGSSTAATEN  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR  
  
20040512 EP/RBV-A [+]   
DESIGNATED CONTRACTING STATES (CORRECTION):  
BENANNTTE VERTRAGSSTAATEN (KORR.)  
DE FR GB IT  
  
20050209 EP/17Q-A   
FIRST EXAMINATION REPORT  
ERSTER PRUEFUNGSBESCHEID  
EFFECTIVE DATE: 20041223  
  
20060222 EP/AK-A [+]   
DESIGNATED CONTRACTING STATES:  
BENANNTTE VERTRAGSSTAATEN  
DE FR GB IT

20060222 EP/REG-A; GB/FG4D [+]  
GB: EUROPEAN PATENT GRANTED  
<GB>

20060427 EP/REF-A  
CORRESPONDS TO:  
ENTSPRICHT  
(DE 60117374 20060427 [DE60117374])

20070131 EP/26N-A [+]  
NO OPPOSITION FILED  
KEIN EINSPRUCH EINGELEGT  
EFFECTIVE DATE: 20061123

20070404 EP/25-A [-]  
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT  
INFORM. FROM NAT. OFFICE TO EPO  
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT  
INFORM. FROM NAT. OFFICE TO EPO  
<DE>  
EFFECTIVE DATE: 20060523

20070420 EP/EN-A [-]  
FR: TRANSLATION NOT FILED  
FR: TRADUCTION N'A PAS ETE REMISE

UP - 2007-19




---

4 / 7 PLUSPAT - ©QUESTEL-ORBIT

PN - JP2004513471 T 20040430 [JP2004513471]  
STG - (T) Unexam. Pat. Appl. On foreign appl.  
IC - (T) H01J-037/317 H01L-021/265  
AP - JP2002502808T 20010423 [2002JP-0502808]  
PR - US58649200 20000602 [2000US-0586492]  
WOUS0113008 20010423 [2001WO-US13008]  
ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]  
ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]  
UP - 2004-22




---

5 / 7 PLUSPAT - ©QUESTEL-ORBIT

PN - TW493211 B 20020701 [TW-493211]  
STG - (B) Patent  
TI - (B) Method and apparatus for controlling ion implantation during vacuum  
fluctuation  
PA - (B) VARIAN SEMICONDUCTOR EQUIPMENT (US)

IN - (B) WALTHER STEVEN R (US)  
 IC - (B) H01L-021/00 H01L-021/265  
 AP - TW90110853 20010507 [2001TW-0110853]  
 PR - US58649200 20000602 [2000US-0586492]  
 ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]  
 ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]  
 UP - 2003-21

---


1 / 1 LEGALI - ©EPO

PN - TW493211 B 20020701 [TW-493211]  
 AP - TW90110853 20010507 [2001TW-0110853]  
 ACT - 20021112 TW/GD4A-A [+]  
 ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT  
 ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT  
 UP - 2004-28




---

6 / 7 PLUSPAT - ©QUESTEL-ORBIT - image

PN -  US6323497 B1 20011127 [US6323497]  
 STG - (B1) U.S. Patent (no pre-grant pub.) after Jan. 2, 2001  
 TI - (B1) Method and apparatus for controlling ion implantation during vacuum fluctuation  
 PA - (B1) VARIAN SEMICONDUCTOR EQUIPMENT (US)  
 PA0 - Varian Semiconductor Equipment Assoc., Gloucester MA [US]  
 IN - (B1) WALTHER STEVEN R (US)  
 IC - (B1) G21G-005/10  
 AP - US58649200 20000602 [2000US-0586492]  
 PR - US58649200 20000602 [2000US-0586492]  
 ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]  
 ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]  
 EC - H01J-037/304  
 H01J-037/317A  
 PCL - ORIGINAL (O) : 250492210; CROSS-REFERENCE (X) : 250492100  
 DT - Basic  
 UP - 2001-49

---

1 / 1 LEGALI - ©EPO

PN - US6323497 B1 20011127 [US6323497]  
 AP - US58649200 20000602 [2000US-0586492]  
 ACT - 20000602 US/AS-A  
 ASSIGNMENT  
 OWNER: VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC.  
 35; EFFECTIVE DATE: 20000530

ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNOR:WALTHER,  
STEVEN R.;REEL/FRAME:010870/0574

20031111 US/RF-A  
REISSUE APPLICATION FILED  
EFFECTIVE DATE: 20030624

UP - 2004-29




---

7 / 7 PLUSPAT - ©QUESTEL-ORBIT - image

PN - WO200195363 A1 20011213 [WO200195363]  
STG - (A1) Publ. Of int. Appl. With int. Search rep  
TI - (A1) METHOD AND APPARATUS FOR CONTROLLING ION  
IMPLANTATION DURING VACUUM FLUCTUATION  
OTI - (A1) PROCEDE ET DISPOSITIF DE COMMANDE D'IMPLANTATION  
IONIQUE PENDANT DES FLUCTUATIONS DE VIDE  
PA - (A1) VARIAN SEMICONDUCTOR EQUIPMENT (US)  
PA0 - VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC.; 35 Dory  
Road, Gloucester, MA 01930 (US)  
IN - (A1) WALTHER STEVEN R  
IC - (A1) H01J-037/18 H01J-037/317  
LA - ENGLISH (ENG)  
AP - WOUS0113008 20010423 [2001WO-US13008]  
PR - US58649200 20000602 [2000US-0586492]  
ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]  
ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]  
EC - H01J-037/304  
H01J-037/317A  
DS - CN; IL; JP; KR; European patent (AT; BE; CH; CY; DE; DK; ES; FI; FR; GB;  
GR; IE; IT; LU; MC; NL; PT; SE; TR)  
DT - Corresponding document  
UP - 2002-02

---

1 / 1 LEGALI - ©EPO

PN - WO200195363 A1 20011213 [WO200195363]  
AP - WOUS0113008 20010423 [2001WO-US13008]  
ACT - 20011213 WO/AK [+]  
DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH  
SEARCH REPORT  
CN IL JP KR  
  
20011213 WO/AL [+]  
DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A  
PUBLISHED APPLICATION WITH SEARCH REPORT  
AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

20020206 WO/121

EP: THE EPO HAS BEEN INFORMED BY WIPO THAT EP WAS  
DESIGNATED IN THIS APPLICATION

20020221 WO/DFPE

REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO  
EXPIRATION OF 19TH MONTH FROM PRIORITY DATE

20021127 WO/WWE [+]

WIPO INFORMATION: ENTRY INTO NATIONAL PHASE  
< 018102603 >

20021130 WO/WWE [+]

WIPO INFORMATION: ENTRY INTO NATIONAL PHASE  
< 1020027016409 >

20021202 WO/ENP

ENTRY INTO THE NATIONAL PHASE IN:  
JP 2002 502808A [2002JP-0502808]

20030123 WO/WWP [+]

WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE  
< 1020027016409 >

UP - 2006-42

Search statement 2

---

[Top](#)

[Back](#)

Source: [Legal](#) > [Federal Legal - U.S.](#) > [United States Code Service \(USCS\) Materials](#) > [United States Code Service - Titles 1 through 50](#)

**United States Code Service - Titles 1 through 50**

☒ Terms and Connectors ☐ Natural Language

6323497 or 6,323,497

Search: ☒ Full-text of source documents



Advanced

☐ Table of Contents (TOC) only

☐ Search Selected Only





[Clear All Selections](#) | [Hide Book Headers](#)

- ☒ ☐ TITLE 1. GENERAL PROVISIONS
- ☒ ☐ TITLE 2. THE CONGRESS
- ☒ ☐ TITLE 3. THE PRESIDENT
- ☒ ☐ TITLE 4. FLAG AND SEAL, SEAT OF GOVERNMENT, AND THE STATES
- ☒ ☐ TITLE 5. GOVERNMENT ORGANIZATION AND EMPLOYEES
- ☒ ☐ TITLE 6. DOMESTIC SECURITY
- ☒ ☐ TITLE 7. AGRICULTURE
- ☒ ☐ TITLE 8. ALIENS AND NATIONALITY
- ☒ ☐ TITLE 9. ARBITRATION
- ☒ ☐ TITLE 10. ARMED FORCES
- ☒ ☐ TITLE 11. BANKRUPTCY
- ☒ ☐ TITLE 12. BANKS AND BANKING
- ☒ ☐ TITLE 13. CENSUS
- ☒ ☐ TITLE 14. COAST GUARD
- ☒ ☐ TITLE 15. COMMERCE AND TRADE
- ☒ ☐ TITLE 16. CONSERVATION
- ☒ ☐ TITLE 17. COPYRIGHTS
- ☒ ☐ TITLE 18. CRIMES AND CRIMINAL PROCEDURE
- ☒ ☐ TITLE 19. CUSTOMS DUTIES
- ☒ ☐ TITLE 20. EDUCATION
- ☒ ☐ TITLE 21. FOOD AND DRUGS
- ☒ ☐ TITLE 22. FOREIGN RELATIONS AND INTERCOURSE
- ☒ ☐ TITLE 23. HIGHWAYS
- ☒ ☐ TITLE 24. HOSPITALS AND ASYLUMS
- ☒ ☐ TITLE 25. INDIANS
- ☒ ☐ TITLE 26. INTERNAL REVENUE CODE
- ☒ ☐ TITLE 27. INTOXICATING LIQUORS
- ☒ ☐ TITLE 28. JUDICIARY AND JUDICIAL PROCEDURE
- ☒ ☐ TITLE 29. LABOR
- ☒ ☐ TITLE 30. MINERAL LANDS AND MINING
- ☒ ☐ TITLE 31. MONEY AND FINANCE
- ☒ ☐ TITLE 32. NATIONAL GUARD
- ☒ ☐ TITLE 33. NAVIGATION AND NAVIGABLE WATERS
- ☒ ☐ TITLE 34. [NAVY]
- ☒ ☐ TITLE 35. PATENTS
- ☒ ☐ TITLE 36. PATRIOTIC AND NATIONAL OBSERVANCES, CEREMONIES, AND ORGANIZATIONS
- ☒ ☐ TITLE 37. PAY AND ALLOWANCES OF THE UNIFORMED SERVICES
- ☒ ☐ TITLE 38. VETERANS' BENEFITS
- ☒ ☐ TITLE 39. POSTAL SERVICE
- ☒ ☐ TITLE 40. PUBLIC BUILDINGS, PROPERTY, AND WORKS
- ☒ ☐ TITLE 41. PUBLIC CONTRACTS
- ☒ ☐ TITLE 42. THE PUBLIC HEALTH AND WELFARE
- ☒ ☐ TITLE 43. PUBLIC LANDS


- ☒ ☐ TITLE 44. PUBLIC PRINTING AND DOCUMENTS
- ☒ ☐ TITLE 45. RAILROADS
- ☒ ☐ TITLE 46. SHIPPING
- ☒ ☐ TITLE 47. TELEGRAPHS, TELEPHONES, AND RADIOTELEGRAPHS
- ☒ ☐ TITLE 48. TERRITORIES AND INSULAR POSSESSIONS
- ☒ ☐ TITLE 49. TRANSPORTATION
- ☒ ☐ TITLE 50. WAR AND NATIONAL DEFENSE

1 - 50 of 50

Key:

- ☒ Click to expand level.\*
- ☐ Click to collapse level.\*
-  Click to expand document subheadings.\*
-  Click to collapse document subheadings.\*
-  Click link to display full text of document.\*
-  Click to generate a TOC linking url.

\* Hover your cursor over this icon to display the Multiple Level Expand navigation menu.

Source: [Legal](#) > [Federal Legal - U.S.](#) > [United States Code Service \(USCS\) Materials](#) > **United States Code Service - Titles 1 through 50** 



**LexisNexis®**

[About LexisNexis](#) | [Terms & Conditions](#)

[Copyright](#) © 2007 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

## No Documents Found!

No documents were found for your search terms

"6323497 or 6,323,497"

---

Click "Save this search as an Alert" to schedule your search to run in the future.

- OR -

Click "Edit Search" to return to the search form and modify your search.

Suggestions:

- Check for spelling errors .
- Remove some search terms.
- Use more common search terms, such as those listed in "Suggested Words and Concepts"
- Use a less restrictive date range.

---

☒ Save this Search as an Alert

Edit Search



LexisNexis®

[About LexisNexis](#) | [Terms & Conditions](#)

[Copyright ©](#) 2007 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

**LexisNexis® Total Research System**[Switch Client](#) | [Preferences](#) | [Feedback](#) | [Sign Off](#) | [Help](#)[My Lexis™](#)[Search](#)[Research Tasks](#)[Search Advisor](#)[Get a Document](#)[Shepard's®](#)[Alerts](#)[History](#)[Sources](#)[Guided Search Forms](#)[Command Searching](#)

**Combined Source Set 15** - Federal & State Cases, Combined; Federal Court Cases, Combined; State Court Cases, Combined; U.S. Supreme Court Cases, Lawyers' Edition; U.S. Supreme Court Briefs; Federal Agency Decisions, Combined; State Administrative Codes & Registers, Combined

**Enter Search Terms**
☒ **Terms and Connectors**   
 ☐ Natural Language   
 ☐ Easy Search
[Suggest Terms  
for My Search](#) **Search**[Check Spelling](#)**Restrict by Document Segment:**

Select a document segment, enter search terms for the segment, then click Add.

Note: Segment availability differs between sources. Segments may not be applied consistently across sources.

**Restrict by Date:**
☒ **No Date Restrictions**   
 ☐ From  To  [Date Formats...](#)
**Search Help****Search Conn**

and            and  
 or             or  
 w/N          withi  
 pre /N      preci  
 w/p         in sa  
 w/seg      in sa  
 w/s         in sa  
 and not     and  
 > More Connect

**How Do I...?**

> Use wildcards  
     for one or mor  
     search term?  
 > Restrict by do  
 > Restrict by da

[View](#)

[My Lexis™](#) | [Search](#) | [Research Tasks](#) | [Search Advisor](#) | [Get a Document](#) | [Shepard's®](#) | [Alerts](#)  
[History](#) | [Delivery Manager](#) | [Switch Client](#) | [Preferences](#) | [Feedback](#) | [Sign Off](#) | [Help](#)

**LexisNexis®**[About LexisNexis](#) | [Terms & Conditions](#)

Copyright © 2007 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

## No Documents Found!

No documents were found for your search terms

"(6323497 or 6,323,497)"

---

Click "Edit Search" to return to the search form and modify your search.

### Suggestions:

- Check for spelling errors .
  - Remove some search terms.
  - Use more common search terms, such as those listed in "Suggested Words and Concepts"
  - Use a less restrictive date range.
- 

[Edit Search](#)



**LexisNexis®**

[About LexisNexis](#) | [Terms & Conditions](#)

[Copyright ©](#) 2007 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

**LexisNexis® Total Research System**[Switch Client](#) | [Preferences](#) | [Feedback](#) | [Sign Off](#) | [Help](#)[My Lexis™](#)[Search](#)[Research Tasks](#)[Search Advisor](#)[Get a Document](#)[Shepard's®](#)[Alerts](#)[History](#)[Sources](#)[Guided Search Forms](#)[Command Searching](#)

**Combined Source Set 14** ⓘ - Intellectual Property Cases, Administrative Decisions & Regulations; Federal Register and CFR - Titles 19 and 37; Federal Register Documents Relating To Patent Issues; U.S. Patent & Trademark Office Decisions, Combined; Intellectual Property Law Review Articles, Combined; Patent, Trademark & Copyright Periodicals, Combined; Intellectual Property Law, Combined

**Enter Search Terms**
☒ **Terms and Connectors**   
 ☐ Natural Language   
 ☐ Easy Search
[Suggest Terms  
for My Search](#)[Check Spelling](#)**Restrict by Document Segment:**

Select a document segment, enter search terms for the segment, then click Add.



Note: Segment availability differs between sources. Segments may not be applied consistently across sources.

**Restrict by Date:**
☒ **No Date Restrictions** ⓘ   
 ☐ From  To  [Date Formats...](#)
**Search Help****Search Conn**

and      and  
 or      or  
 w/N      withi  
 pre /N      preci  
 w/p      in sa  
 w/seg      in sa  
 w/s      in sa  
 and not      and i  
 > More Connect

**How Do I...?**

> Use wildcards  
 for one or mor  
 search term?  
 > Restrict by do  
 > Restrict by da

[View](#)

[My Lexis™](#) | [Search](#) | [Research Tasks](#) | [Search Advisor](#) | [Get a Document](#) | [Shepard's®](#) | [Alerts](#)  
[History](#) | [Delivery Manager](#) | [Switch Client](#) | [Preferences](#) | [Feedback](#) | [Sign Off](#) | [Help](#)

**LexisNexis®**[About LexisNexis](#) | [Terms & Conditions](#)

Copyright © 2007 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

## No Documents Found!

No documents were found for your search terms

"(6323497 or 6,323,497)"

---

Click "Save this search as an Alert" to schedule your search to run in the future.

- OR -

Click "Edit Search" to return to the search form and modify your search.

### Suggestions:

- Check for spelling errors .
  - Remove some search terms.
  - Use more common search terms, such as those listed in "Suggested Words and Concepts"
  - Use a less restrictive date range.
- 

☒ Save this Search as an Alert

Edit Search



LexisNexis®

[About LexisNexis](#) | [Terms & Conditions](#)

[Copyright ©](#) 2007 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

**LexisNexis® Total Research System**

Switch Client | Preferences | Feedback | Sign Off | Help

[My Lexis™](#)[Search](#)[Research Tasks](#)[Search Advisor](#)[Get a Document](#)[Shepard's®](#)[Alerts](#)[History](#)[Sources](#)[Guided Search Forms](#)[Command Searching](#)

Combined Source Set 1 - News, All (English, Full Text); Legal News Publications

**Enter Search Terms**☒ Terms and Connectors ☐ Natural Language ☐ Easy Search

(6323497 or 6,323,497)

[Suggest Terms  
for My Search](#) **Search** [Check Spelling](#)**Restrict by Document Segment:**

Select a document segment, enter search terms for the segment, then click Add.

[Select a Segment](#)[Add](#)

Note: Segment availability differs between sources. Segments may not be applied consistently across sources.

**Restrict by Date:**☒ [No Date Restrictions](#) ☐ From  To  [Date Formats...](#) **Search Help****Search Conn**

and and  
or or  
w/N withi  
pre /N preci  
w/p in sa  
w/seg in sa  
w/s in sa  
and not and i  
> More Connect

**How Do I...?**

> Use wildcards  
for one or mor  
search term?  
> Restrict by do  
> Restrict by da

[View](#)

[My Lexis™](#) | [Search](#) | [Research Tasks](#) | [Search Advisor](#) | [Get a Document](#) | [Shepard's®](#) | [Alerts](#)  
[History](#) | [Delivery Manager](#) | [Switch Client](#) | [Preferences](#) | [Feedback](#) | [Sign Off](#) | [Help](#)

[About LexisNexis](#) | [Terms & Conditions](#)

Copyright © 2007 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.

## No Documents Found!

No documents were found for your search terms

"(6323497 or 6,323,497)"

---

Click "Edit Search" to return to the search form and modify your search.

### Suggestions:

- Check for spelling errors .
  - Remove some search terms.
  - Use more common search terms, such as those listed in "Suggested Words and Concepts"
  - Use a less restrictive date range.
- 

[Edit Search](#)



**LexisNexis®**

[About LexisNexis](#) | [Terms & Conditions](#)

[Copyright ©](#) 2007 LexisNexis, a division of Reed Elsevier Inc. All rights reserved.